* NOTICES *

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the disk cartridge used as a record medium of information record regenerative apparatus, such as a floppy disk drive unit and an optical disk.
[0002]
[Description of the Prior Art] Drawing 13 and 14 are the perspective views showing an example of the conventional disk cartridge. The cartridge case 102 made of synthetic resin which contains this disk cartridge 101 for the disk-like record medium 103 inside, enabling free rotation, The crevice 104,105 formed in both sides of a cartridge case 102 along with 1 side-edge 102a, The opening 106 for heads to be prepared in a crevice 104,105 and for the magnetic recording reproducing head of an information record regenerative apparatus approach a record medium 103, The shutter 107 of the typeface of cross-section KO which is attached free [sliding] along a crevice 104,105 in the condition over 1 side-edge 102a of a cartridge case 102, and opens and closes the opening 106 for heads, It has the guide plate 108 which is prepared in one field of a cartridge case 102, and presses down the front face of the free edge of a shutter 107. In the cartridge case 102, a guide plate 108 is formed of the member (for example, metal plate) of another object, and is stuck on the cartridge case 102 through the second page tape etc.
[0003] In such a disk cartridge, the activity which sticks a guide plate 108 on a cartridge case 102 has taken time and effort very much, and since it is the factor to which this invites a cost rise, really fabricating a guide plate 108 to a cartridge case 102 is examined. Thus, since there is a problem also in reinforcement difficult [injection molding] when really fabricating a guide plate 108, and a guide plate 108 is thin, it is necessary to make a guide plate 108 thicker than the case of an attachment method. In this case, since there is a possibility that a guide plate 108 may be caught in case loading of the disk cartridge is carried out to an information record regenerative apparatus when a guide plate 108 is made thick on the outside, a guide plate 108 must be made inside thick. However, if a shutter 107 is newly designed according to this, while costs, such as metal mold expense, will increase and bringing about the jump of cost, in order to have to use properly the shutter made newly with the existing shutter, there is a problem that management of components becomes complicated.
[0004] It aims at offering the disk cartridge which solved such a trouble and reduced the time and effort of cost and parts control. To JP,9-288876,A In a disk cartridge with the crevice of depth d formed in both sides of a cartridge case along with one side edge The crevice of the field in which the guide plate was really fabricated to the cartridge case, and the guide plate was prepared The disk cartridge which formed so that the depth of the surrounding part of a guide plate might become larger than the above-mentioned depth d, and formed the surrounding base of the guide plate in the crevice of the field in which this guide plate was prepared in the condition of having inclined toward the guide plate is proposed.
[0005] If it does in this way, the flow of the melting resin at the time of injection molding will become smooth, and a moldability will improve. Moreover, since change of the depth of a crevice becomes continuous, while the mechanical strength of a crevice improves, since change of the depth of a crevice stops being able to be conspicuous easily, an appearance improves.
[0006] Drawing 5 - drawing 11 are drawings showing the disk cartridge of this number official report, and it is the cross-section perspective view in which drawing where drawing 5 looked at the half in whom a top view, drawing 6 , and 7 form a bottom view in, and drawing 8 forms the base side of a cartridge case from the side front, drawing where drawing 9 looked at the half of drawing 8 from the background, and drawing 10 show the A-A' line sectional view of drawing 8 , and drawing 11 shows the configuration of a crevice 7.
[0007] As shown in drawing 5 - drawing 7 , the disk cartridge 1 equips the interior with the cartridge case 2 contained

for the disk-like record medium 3, enabling free rotation. The cartridge case 2 is formed by making the case halves 4 and 5 made of the hard synthetic resin of the vertical pair which counters mutually (the following, a "half", and abbreviation) meet, and joining together.

[0008] The rectangular crevices 6 and 7 are formed in both sides of this cartridge case 2 along with 1 side-edge 2a. The opening 8 for heads for the magnetic recording reproducing head of an information record regenerative apparatus to approach a record medium 3 is formed in crevices 6 and 7. In the crevice 7 by the side of a base, the opening 9 for driving shafts for inserting the driving shaft of the information record regenerative apparatus detached and attached by the center hall of a record medium 3 is formed, and this opening 9 for driving shafts is formed in the condition of having been connected in [as the opening 8 for heads] one.

[0009] The shutter 10 which opens and closes the opening 8 for heads and the opening 9 for driving shafts is attached in one side edge 2a of a cartridge case 2. As shown in drawing 12 (b), the shutter 10 is formed in the cross-section KO typeface which consists of the rectangular short piece 11 and the long piece 12 which counter, and a piece 13 of middle which connects these ends, and the screw stop is carried out to the slider 14 made of synthetic resin attached free [sliding] along with 1 side-edge 2a of a cartridge case 2 in the condition over 1 side-edge 2a.

[0010] The shutter 10 is guided free [sliding] along crevices 6 and 7 by the slider 14, when it is in drawing 5 and the location of 6, it closes the opening 8 for heads, and the opening 9 for driving shafts, and when it is in the location of drawing 7 , it opens the opening 8 for heads, and the opening 9 for driving shafts. In addition, elastic energization of the slider 14 is carried out in the closed direction (left of drawing 6) with the spring 15, and the opening 8 for heads and the opening 9 for driving shafts are closed by the shutter 10 at the time of un-using it.

[0011] It may be prepared for a half 4, although 16 is a guide plate which presses down the front face of free edge 12a of the long piece 12 of a shutter 10 and it is really fabricated by the half 5. As designation in drawing 11 , among the level difference sides of a crevice 7, the guide plate 16 protrudes from the level difference side 31 parallel to said 1 side-edge 2a so that it may become flat-tapped with a half's 5 front face.

[0012] As drawing 10 , a half 5 is countered with this guide plate 16, and the through tube 17 is prepared for him. This through tube 17 is for forming a guide plate 16 only by comparison of the fixed side and movable side of metal mold at the time of a half's 5 injection molding.

[0013] A crevice 7 is the depth (0.6mm) as depth d of the crevice 105 of drawing 13 and the disk cartridge 101 shown in 14 with same partial (part near 1 side-edge 2a) 7a far from the level difference side 31, as shown in drawing 11 . Partial 7b of a up to [from this partial 7a] near the level difference side 31 inclines in the direction (the direction of an arrow head K) in which a base goes to a guide plate 16, and, as for the depth of ********** (refer to drawing 11 (a)) and direct near part part 7c of a guide plate 16, the depth has become 0.85mm from 0.6mm to 0.85mm.

[0014] A shutter 10 is the same as the shutter 107 of drawing 13 and the disk cartridge 101 of 14. If it is going to attach in a slider 14 the place where the guide plate 16 is thicker than the guide plate 108 of the conventional disk cartridge 101 to the shutter 10 like drawing 13 and the disk cartridge 101 of 14 Although the apical surface of free edge 12a of the long piece 12 of a shutter 10 cannot attach a shutter 10 in the apical surface of a guide plate 16, since direct near part part 7c of the part for a level difference side 31 direct near part and the guide plate 16 of inclination partial 7b is deep, As shown in drawing 10 , the part by the side of free edge 12a of the long piece 12 can be made to incline in the inner direction, and free edge 12a can be inserted in the background of a guide plate 16.

[0015] Moreover, since it is formed in the condition that inclination partial 7b inclined in the method of inside toward the guide plate 16, the flow of the melting resin at the time of injection molding is smooth, and a moldability is good.

[0016]

[Problem(s) to be Solved by the Invention] ** If it is in the disk cartridge of above-mentioned drawing 5 -11, the depth becomes small gradually as drawing 11 (d) as partial 7c which meets a guide plate 16 among the parts along the level difference side 31 of a crevice 7 is fully as deep as 0.85mm and becomes the method of the right of drawing 11 (a) and (d) from this partial 7c. This is for resin to make it easy to flow into the parts of 7b and 7c at the time of injection molding as above-mentioned.

[0017] however, the place where a crevice 7 becomes more gradually shallow [the method of the right] along the level difference side 31 in this way to the shutter 10 is moved in the open direction like drawing 7 -- making (it being made to move to the method of the right in drawing 11) -- free edge 12a of the long piece 12 of a shutter 10 contacts the base of a crevice 7, for sliding of a shutter 10, it will become a load and a shutter 10 will not slide smoothly. Moreover, when a shutter 10 contacts the base of a crevice 7, this base separates and there is also a possibility of producing raising dust.

[0018] Synthetic resin cannot reach easily the part which meets the opening 8 for the heads shown [in / although it was possible to make altogether the depth of the crevice 7 which meets the level difference side 31 in order to solve such a

problem as deep, for example as 0.85mm in the longitudinal direction of drawing 11 (d), when the crevice depth is made into homogeneity along the level difference side 31 only in this way / drawing 11] by S at the time of injection molding, and it is easy to produce a short shot.

[0019] ** If it is in the conventional disk cartridge as shown in drawing 12 (a) which is the sectional view which meets the XII-XII line of drawing 5 , the depth of a crevice 6 is uniform in the direction which separates from one side edge 2a. As shown in drawing 12 (b), a shutter 10 has the short piece 11 and the parallel long piece 12, so that the crevice 6 of such the uniform depth may be suited.

[0020] If the depth of such a crevice 6 is in a uniform disk cartridge, the shutter 10 curved so that parallelism with the long piece 12 might be bad and the extension direction tip side of the short piece 11 might approach the long piece 12 in the short piece 11 cannot be used like drawing 12 (c). That is, if a cartridge case 2 is equipped with the shutter 10 of the configuration like drawing 12 (c), the tip side of the short piece 11 contacts the base of a crevice 6, for sliding of a shutter 10, it will become a load and a shutter 10 will not slide smoothly. Moreover, a possibility of producing raising dust also has a shutter 10 by contacting the base of a crevice 6.

[0021] Therefore, like drawing 12 (c), the parallelism of the short piece 11 and the long piece 12 was treated as a defective, and was not able to build the bad shutter 10 into the cartridge case.

[0022] This invention solves such various troubles, and a shutter opens and closes it smoothly, it does not have raising dust by the scratch of a shutter, and, moreover, there is no short shot at the time of injection molding, and it aims at the manufacture yield offering a high disk cartridge.

[0023]

[Means for Solving the Problem] The disk cartridge of this invention (claim 1) The cartridge case made of synthetic resin contained for the disk-like record medium inside, enabling free rotation, The crevice formed in both sides of this cartridge case, and opening for heads prepared in this crevice, The shutter which is attached free [sliding] along said crevice in the condition over one side edge of said cartridge case, and opens and closes said opening for heads, Are the level difference side facing this crevice of said cartridge case, and it protrudes on the location which covers the free edge of this shutter from a part of level difference side parallel to this one side edge. In the disk cartridge by which it is the disk cartridge equipped with the guide plate which presses down the front face of the free edge of this shutter, and this guide plate is a cartridge case and really [said] fabricated As for the part near a level difference side parallel to said one side edge, the depth is becoming large gradually toward this level difference side among the bases of this crevice. And the depth of this crevice In said one side edge and parallel direction, it is the same and is characterized by a part of decussation corner [at least] of a level difference side parallel to this one side edge and the base of this crevice serving as a concave bend side or a slant face.

[0024] If it is in this disk cartridge, resin tends to flow into the cavity for formation of a crevice which meets a level difference side parallel to one side edge among crevices at the time of injection molding. That is, resin becomes easy to flow into the neighborhood which shows the metal mold side for forming this level difference side by S of said drawing 11 among metal mold cavities through this part since the square edge section serves as a curved surface or a slant face, and a short shot is prevented.

[0025] The disk cartridge of this invention (claim 2) The cartridge case made of synthetic resin contained for the disk-like record medium inside, enabling free rotation, The crevice formed in both sides of this cartridge case, and opening for heads prepared in this crevice, The shutter which is attached free [sliding] along said crevice in the condition over one side edge of said cartridge case, and opens and closes said opening for heads, Are the level difference side facing this crevice of said cartridge case, and it protrudes on the location which covers the free edge of this shutter from a part of level difference side parallel to this one side edge. In the disk cartridge by which it is the disk cartridge equipped with the guide plate which presses down the front face of the free edge of this shutter, and this guide plate is a cartridge case and really [said] fabricated As for the part near a level difference side parallel to said one side edge, the depth is becoming large gradually toward this level difference side among the bases of this crevice. And the depth of this crevice In said one side edge and parallel direction, it is the same and is characterized by some [at least] decussation corners of a part where said depth becomes large gradually among the decussation corners of the base of said crevice and said level difference side serving as a concave bend side or a slant face.

[0026] Even if it is in this disk cartridge, resin becomes easy to flow into the neighborhood which shows the metal mold side for forming the level difference side which attends the part to which the depth becomes large gradually among crevices by S of said drawing 11 among metal mold cavities through this part since the square edge section serves as a curved surface or a slant face, and a short shot is prevented.

[0027] three level difference sides with the 2nd and 3rd level difference sides which extend in this invention in a level difference side, and this one side edge and the rectangular direction of the 1st with a crevice parallel to said one side

edge -- having -- **** -- opening for heads -- this -- the crevice base of a part where it has extended along the 2nd level difference side, and the depth becomes large gradually -- this -- it is desirable that the decussation corner with the 3rd level difference side serves as a concave bend side or a slant face. Furthermore, it is desirable that the decussation corner at this 1st level difference side and the base of a crevice serves as a concave bend side or a slant face.
[0028] As for the decussation corner of the end face section of a guide plate, and a level difference side, in the disk cartridge of this invention, it is desirable to have the shape of a concave bend side (the shape of R) or a slant face (letter of beveling).
[0029] It can fabricate by constituting the end face section of a guide plate in this way, without resin's flowing smoothly in the cavity for formation of this guide plate at the time of injection molding, and causing a short shot for this guide plate.
[0030] The disk cartridge of this invention (claim 6) The cartridge case made of synthetic resin contained for the disk-like record medium inside, enabling free rotation, The crevice formed in both sides of this cartridge case, and opening for heads prepared in this crevice, It is a disk cartridge with the shutter which is attached free [sliding] along said crevice in the condition over one side edge of said cartridge case, and opens and closes said opening for heads. The long piece by which this shutter has been arranged in the crevice of one field of this disk cartridge, It is the thing of the shape of an abbreviation KO typeface with the piece of middle which has connected the short pieces arranged in the crevice of the field of another side, and these long pieces and short pieces. In the disk cartridge whose extension die length of the direction which separates from the piece of middle of this long piece is size from the extension die length of this short piece, the crevice of the field of this another side is characterized by the depth being large as it is isolated from this one side edge to a side far from said one side edge at least.
[0031] If it is in this disk cartridge, contact on a crevice base is prevented like drawing 12 (c) the short piece tip side when equipping a cartridge case also about a shutter with the bad parallelism of a short piece and a long piece.
[0032] Thus, when a crevice is made so deep that it separates from one side edge of a cartridge case, like claim 8, by making the decussation corner at a level difference side parallel to this one side edge, and the base of a crevice into a concave bend side or a slant face, resin flows smoothly in the mold cavity for this crevice base formation at the time of a half's injection molding, and a short shot is prevented.
[0033]
[Embodiment of the Invention] The perspective view near [for heads] opening of the disk cartridge which drawing 1 (a) requires for the gestalt of operation, drawing 1 (b), and (c) are sectional views which meet the B-B line of drawing 1 (a), and a C-C line, respectively. The cross-section perspective view to which drawing 2 (a) meets the II-II line of drawing 1 (a), drawing 2 (b), and (c) are the sectional views showing the configuration of the decussation corner of a guide plate and the level difference side 31. The sectional view where drawing 3 (a) meets the III-III line of drawing 1 (a), drawing 3 (b), and (c) are the sectional views showing the configuration of the decussation corner at the level difference side 31 and the base of a crevice. The cross-section perspective view in which drawing 4 (a) regarded near [for heads] opening of the disk cartridge of drawing 1 as drawing 1 (a) from hard flow, the sectional view where drawing 4 (b) meets the B-B line of drawing 4 (a), and drawing 4 (c) are the sectional views showing another example of a configuration of the same part as drawing 4 (b).
[0034] even if it is in the gestalt of this operation -- the base of a crevice 7 -- the homogeneity depth by the side of said 1 side-edge 2a -- and comparatively shallow partial 7a -- and it consists of inclination partial 7b which becomes deep gradually toward the level difference side (1st level difference side) 31, and partial 7c in alignment with a guide plate 16. Moreover, three sides are surrounded in respect of [31, 32, and 33] a level difference, and the crevice 7 serves as a rectangle which one side faced said 1 side-edge 2a. The opening 8 for heads and the opening 9 for driving shafts have extended along this 2nd level difference side 32, and are comparatively distant from the 3rd level difference side 33. Bases 7a and 7b are arranged between the opening 9 for driving shafts and the 3rd level difference side 33 which stand in a row in this opening 8 for heads and it.
[0035] The gestalt of this operation as ** of a degree - ** The depth of base 7b thru/or the point of an inclination, The description is in the configuration of the decussation corner of the configuration of the decussation corner of the level difference sides 31 and 33 and base 7b, the configuration of the decussation corner of a guide plate 16 and the level difference side 31, the point of the inclination of the base of a crevice 6, and the base of a crevice 6 and a level difference side, and other configurations are the same as that of the conventional example of drawing 5 - drawing 11 .
[0036] ** : if it is in parallel with 1 side-edge 2a, all have the equal depth, and incline only in 1 side-edge 2a and the rectangular direction (the extension direction of the 3rd level difference side 33) as this inclined base 7b is specified by drawing 1 (b), (c), and drawing 4 (b), if it is in the gestalt of this operation.
[0037] ** : if it is in the gestalt of this operation, the decussation corner 41 of base 7b and the 1st level difference side

31 and the decussation corner 43 of base 7b and the 3rd level difference side 33 serve as a concave bend side or a slant face. This slant face crosss diagonally to the level difference side 31, or 33 and base 7b. In addition, among drawing 1 - drawing 4 , drawing 2 (c) and drawing 3 (c) show the gestalt of the operation which made the decussation corner the slant face, and others show the gestalt of the operation which made the decussation corner the concave bend side.
[0038] Thus, by having made the decussation corners 41 and 43 into the concave bend side or the slant face, resin comes to flow in from the level difference side 31 and cavity side for 33 formation smoothly to the cavity for the crevice base 7b formation in metal mold at the time of injection molding, and a short shot is prevented.
[0039] That is, if it is in the disk cartridge shown in drawing 5 - drawing 11 , since the decussation corner of the level difference sides 31 and 33 and base 7a serves as a right angle, the square edge section of the cavity side for formation of the level difference sides 31 and 33 is sharp at the right angle. Therefore, resin must flow in in the narrow cavity for crevice formation suddenly from the cavity for forming a part with the big thickness around a crevice 7, and its inflow resistance into this narrow cavity is strong.
[0040] On the other hand, if it is in this invention, since the decussation corner of the level difference sides 31 and 33 and base 7b serves as a concave bend side or a slant face, the square edge section of the level difference side 31 and the cavity side for 33 formation serves as a curved surface or a slant face, and has the composition that the inlet port of the cavity for crevice 7 formation narrows gradually.
[0041] Therefore, inflow resistance of the resin into the cavity for this crevice 7 formation is small, resin is fully supplied also to the field shown in drawing 1 by S, and a short shot is prevented.
[0042] In addition, the depth of the deepest part has about 0.6-1.0 desirablemm among base 7c of a crevice 7, and the depth of base 7a has about 0.4-0.8 desirablemm. When making the decussation corners 41 and 43 into a concave bend side, it is desirable to especially set the radius of curvature of this concave bend side to 0.1mm or more 0.05mm or more, to especially set the dimension t of R-like part to 0.1mm or more 0.05mm or more, and to divide below depth D at the latest base of a crevice of the decussation corner concerned (D-0.2 mm), and to consider as the following. Moreover, when making the decussation corners 41 and 43 into a slant face, as for the dimension t of this slant face, it is desirable for 0.1mm or more to especially cost 0.05mm or more, and to divide below depth D at the latest base of a crevice of the decussation corner concerned (D-0.2 mm), and to consider as the following.
[0043] ** : the decussation corner 51 of the end face section of a guide plate 16 and the level difference side 31 serves as a slant face as the shape of R and drawing 2 (c) which carried out the concave bend to the shape of radii as it is shown in drawing 2 (a) and (b), if it is in the gestalt of this operation. In addition, when making the decussation corner 51 into a concave bend side, it is desirable to especially set the radius of curvature of this concave bend side to 0.1mm or more 0.05mm or more, and to especially set the dimension t of R-like part to 0.1-0.7mm 0.05-1.0mm.
[0044] When making the decussation corner 51 into the slant face which crosss diagonally to a guide plate 16 and the level difference side 31, as for the dimension t of this slant face, it is desirable that 0.1-0.7mm especially costs 0.05-1.0mm.
[0045] Thus, by making the decussation corner 51 of a guide plate 16 and the level difference side 31 into the shape of R, and a slant face, resin tends to flow in the cavity for guide plate 16 formation at the time of injection molding. Therefore, a guide plate 16 can be fabricated, without producing a short shot.
[0046] In addition, when joining a case 4 and five comrades by ultrasonic welding, by making the decussation corner 51 into a concave bend side or a slant face in this way, the reinforcement of the end face section of a guide plate 16 becomes high, the amplitude of the guide plate 16 at the time of ultrasonic welding becomes small, and the heat produced in the end face section of a guide plate 16 decreases. Consequently, it is also prevented that breakage arises in the end face section of a guide plate 16 by ultrasonic welding.
[0047] ** : if it is in the gestalt of this operation, as shown in drawing 12 (d), the base of a crevice 6 is so deep that it separates from one side edge 2a. The decussation corner 62 of the level difference side 61 parallel to this 1 side-edge 2a and the base of a crevice 6 serves as a concave bend side or a slant face (illustration concave bend side).
[0048] Thus, by making the base of a crevice 6 so deep that it separating from one side edge 2a, the shutter 10 of the configuration shown in drawing 12 (c) is also incorporable into a cartridge case.
[0049] Moreover, by having made the decussation corner 62 into the concave bend side or the slant face, resin comes to flow in from the cavity side for level difference side 61 formation smoothly to the cavity for base formation of the crevice 6 in metal mold at the time of injection molding, and a short shot is prevented.
[0050] In addition, in drawing 12 (d), about 0.4-0.8mm has a desirable right end side (shallowest side), and the depth of a crevice 6 has about 0.5-1.0 desirablemm in the deepest place.
[0051] When making the decussation corner 62 into a concave bend side, it is desirable to especially set the radius of curvature of a concave bend side to 0.1mm or more 0.05mm or more, and to especially set the dimension of R-like part

to 0.1mm or more 0.05mm or more. When making the decussation corner 62 into the slant face which crosss diagonally to a crevice base and the level difference side 61, as for the dimension of this slant face, it is desirable that 0.1mm or more especially costs 0.05mm or more.

[0052] Though the dimension of this R-like part and the dimension of a slant face are natural, it is below depth D of a crevice 6, and it is especially (D-0.2 mm) desirable that it is the following.

[0053] Although it is desirable that it is 45 degrees to the level difference side 31 or 33 as for the include angle of a slant face when making the above-mentioned decussation corners 41, 43, 51, and 62 into a slant face, you may be the range of 30-60 degrees. The thickness of a guide plate 16 has about 0.3-0.5 desirablemm.

[0054]

[Effect of the Invention] According to this invention the above passage, in case a disk cartridge is manufactured with injection molding, it is prevented certainly that a short shot arises, and the manufacture yield of a disk cartridge improves remarkably.

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CLAIMS

[Claim(s)]
[Claim 1] The cartridge case made of synthetic resin contained for the disk-like record medium inside, enabling free rotation, The crevice formed in both sides of this cartridge case, and opening for heads prepared in this crevice, The shutter which is attached free [sliding] along said crevice in the condition over one side edge of said cartridge case, and opens and closes said opening for heads, Are the level difference side facing this crevice of said cartridge case, and it protrudes on the location which covers the free edge of this shutter from a part of level difference side parallel to this one side edge. In the disk cartridge by which it is the disk cartridge equipped with the guide plate which presses down the front face of the free edge of this shutter, and this guide plate is a cartridge case and really [said] fabricated As for the part near a level difference side parallel to said one side edge, the depth is becoming large gradually toward this level difference side among the bases of this crevice. And the depth of this crevice The disk cartridge characterized by being the same and a part of decussation corner [at least] of a level difference side parallel to this one side edge and the base of this crevice serving as a concave bend side or a slant face in said one side edge and parallel direction.
[Claim 2] The cartridge case made of synthetic resin contained for the disk-like record medium inside, enabling free rotation, The crevice formed in both sides of this cartridge case, and opening for heads prepared in this crevice, The shutter which is attached free [sliding] along said crevice in the condition over one side edge of said cartridge case, and opens and closes said opening for heads, Are the level difference side facing this crevice of said cartridge case, and it protrudes on the location which covers the free edge of this shutter from a part of level difference side parallel to this one side edge. In the disk cartridge by which it is the disk cartridge equipped with the guide plate which presses down the front face of the free edge of this shutter, and this guide plate is a cartridge case and really [said] fabricated As for the part near a level difference side parallel to said one side edge, the depth is becoming large gradually toward this level difference side among the bases of this crevice. And the depth of this crevice The disk cartridge characterized by some [at least] decussation corners of a part where it is the same and said depth becomes large gradually among the decussation corners of the base of said crevice and said level difference side in said one side edge and parallel direction serving as a concave bend side or a slant face.
[Claim 3] In claim 1 or 2 The 1st level difference side where said crevice is parallel to said one side edge, It is surrounded by three level difference sides with the 2nd and 3rd level difference sides which extend in this one side edge and the rectangular direction. said opening for heads -- this -- the crevice base of a part where it has extended along the 2nd level difference side, and the depth becomes large gradually -- this -- the disk cartridge characterized by the decussation corner with the 3rd level difference side serving as a concave bend side or a slant face.
[Claim 4] The disk cartridge further characterized by the decussation corner of said 1st level difference side and said crevice base serving as a concave bend side or a slant face in claim 3.
[Claim 5] The disk cartridge characterized by the decussation corner of said guide plate and said level difference side serving as a concave bend side or a slant face in claim 1 thrù/or any 1 term of 4.
[Claim 6] The cartridge case made of synthetic resin contained for the disk-like record medium inside, enabling free rotation, The crevice formed in both sides of this cartridge case, and opening for heads prepared in this crevice, It is a disk cartridge with the shutter which is attached free [sliding] along said crevice in the condition over one side edge of said cartridge case, and opens and closes said opening for heads. The long piece by which this shutter has been arranged in the crevice of one field of this disk cartridge, It is the thing of the shape of an abbreviation KO typeface with the piece of middle which has connected the short pieces arranged in the crevice of the field of another side, and these long pieces and short pieces. In the disk cartridge whose extension die length of the direction which separates from the piece of middle of this long piece is size from the extension die length of this short piece the crevice of the field of this another side The disk cartridge characterized by the depth being large as it is isolated from this one side edge to a side far from said one side edge at least.

[Claim 7] It is the disk cartridge characterized by said short piece approaching said long piece like the tip side of said extension direction in claim 6.

[Claim 8] The disk cartridge characterized by the decussation corner of a level difference side parallel to said one side edge among the level difference sides facing the crevice of the field of said another side and the base of this crevice serving as a concave bend side or a slant face in claim 6 or 7.

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